

NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
WASHINGTON, D.C. 20555

IE Bulletin No. 76-07
DATE: July 28, 1976
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CRANE HOIST CONTROL - CIRCUIT MODIFICATIONS

DESCRIPTION OF CIRCUMSTANCES:

In response to NRC concerns about the potential for, and consequences of, dropping a spent fuel shipping cask or other heavy load, Commonwealth Edison modified the hoist control system for the fuel cask handling cranes at their Dresden Units 2 and 3 and Quad cities Units 1 and 2 to provide additional hoist redundancy and slow speed hoist capability. The original design utilized a General Electric "magspeed" hoist control system. In this system which includes two electro-mechanical brakes in series, spring force holds the brakes engaged while DC solenoids, energized when the hoist motor is energized, disengage the brakes.

The modification which added the slow speed hoist capability included installing additional contactors in the brake solenoid power circuit to energize the solenoids when the low speed hoist motor was energized.

The original hoist control system design utilized a single Size 2 DC contactor (two contacts in series) in the solenoid circuit. The design modification added a circuit in parallel with the original DC contactor, with utilized four AC rated Size 1 single contacts in a series-parallel array to distribute current carrying and interrupting burden.

Initial experience with the modified hoist control system at Dresden showed that the circuit interrupting capacity of the series-parallel array was marginal. On several occasions when the low speed motor was stopped in the lowering mode, the solenoid circuit contacts arced resulting in power being supplied to the solenoids long enough so that the load dropped some distance before the brakes engaged. Over travel of as much as 15 inches was reported, but no damage to hoist or load was found.

The crane manufacturer's representatives have advised the NRC that the proposed corrective action is to install a single Size 2 DC contactor (two contacts in series) with arc suppressors, the same as originally provided in the General Electric design, in place of the added four AC rated contacts. The original contactor in the normal speed control circuit has shown satisfactory service since initial operation of the plant in 1969.

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ACTION TO BE TAKEN BY LICENSEE:

1. Determine and report to this office within 20 days the following information:
 - (a) Have you made, or do you plan to make modifications to the hoist control for your installed cranes similar to the described modifications?
 - (b) If such modifications have been made, or are planned, identify changes required in brake power and control circuitry?
 - (c) What steps have been taken or are planned, to provide assurance that brake power contactors are adequate for the service?
2. If modifications are planned, provide the schedule for completion and a brief description of your plans for design review and functional testing.

Your response should be submitted to the Director of this Office, with a copy to the Director, Division of Reactor Inspection Programs, Office of Inspection and Enforcement, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555.

Approval of NRC requirements for reports concerning possible generic problems has been obtained under 44 U. S. C. 3152 from the U. S. General Accounting Office. (GAO Approval B-180255 (R0072), expires 7/31/77).





UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION 1
631 PARK AVENUE
KING OF PRUSSIA, PENNSYLVANIA 19406

July 21, 1976

Docket No. 50-220

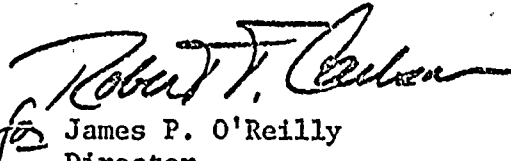
Niagara Mohawk Power Corporation
Attention: Mr. R. R. Schneider
Vice President
Electric Operations
300 Erie Boulevard West
Syracuse, New York 13202

Gentlemen:

Enclosed is IE Bulletin No. 76-06 which requires action by you with regard to your power reactor facility(ies) with an operating license.

Should you have questions regarding this Bulletin or the actions required of you, please contact this office.

Sincerely,


James P. O'Reilly
Director

Enclosure:

IE Bulletin No. 76-06

cc: T. E. Lempges, General Superintendent, Nuclear Generation
T. J. Perkins, Station Superintendent
C. L. Stuart, Operations Supervisor
E. B. Thomas, Jr., Esquire
A. Z. Roisman, Counsel for Citizens Committee for
Protection of the Environment

bcc:

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State of New York

JAMES P. O'REILLY

